

Work Order ID 53420

November 4, 2009 9:15:32 AM



Page 1

Item ID: D212-664-107TRN

Accept



Setup Start



Revision ID: A

Stop



Item Name: Crosstube Turning Detail

Start Date: 04/11/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 06/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

BL

Date:

09-11-4

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D212-664-147	Rev A								

100

0.00



Mori Seiki

MORI SEIKI CNC LATHE LARGE

Memo

0.00

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA705□2-Turn first side as per Folio FA113□3-File down transition lines smooth.

A.N. 09-11-19①

110

0.00



QC

QC1- Inspect dimensions to dimension sheet

Memo

0.00

Quality Control

A.N. 09-11-19①

120

0.00



Mori Seiki

MORI SEIKI CNC LATHE LARGE

Memo

0.00

Mori Seiki CNC Lathe Large

1-Turn second side as per Folio FA705□2-File down transition lines smooth.
□
3- Remove plugs and sand

A.N. 09-11-19①

Work Order ID 53420

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Page 2

Item ID: D212-664-107TRN

Accept

Revision ID: A

Item Name: Crosstube Turning Detail

Start Date: 04/11/2009 Start Qty: 1.00

Required Date: 06/11/2009 Req'd Qty: 1.00

Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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130

QC1- Inspect dimensions to dimension sheet

0.00



QC

Memo

0.00

Quality Control

Q.A. 09-11-120

140

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

1 - - AWM 9-11-23

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

Hand Finishing Crosstubes

1 - - AWM 9-11-23

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Page 3

Item ID: D212-664-107TRN

Accept

Revision ID: A

Item Name: Crosstube Turning Detail

Start Date: 04/11/2009 Start Qty: 1.00

Required Date: 06/11/2009 Req'd Qty: 1.00

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

1 11/11/23

170

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and stock in kanban rack Location: X-TUBE CELL

1 - 11/11/23

180

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

11/11/24

11/11/23

Picklist Print

November 4, 2009 9:15:37 AM

Page 1

Work Order ID: 53420

Parent Item: D212-664-107TRNRevA

Parent Item Name: Crosstube Turning Detail

Comments:

Start Date: 04/11/2009

Required Date: 06/11/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
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D6019-128RevA

Manufactured

No

110

Each

24.0000

1.0000



Crosstube Material

Q.m 09-11-190

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

LG

24

29369

1

32310

7

50893

16

1

DART AEROSPACE LTD	Work Order: 53420
Description: Crosstube Assembly (205/212/412 Low Fwd)	Part Number: D212-664-147
Inspection Dwg: D212-664-147 Rev: A	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

	Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	0.313	+/-0.010	0.313	/			
	2.360	+0.005/-0.000	2.365	/			
	2.360	+0.005/-0.000	2.365	/			
	2.366	+0.005/-0.000	2.371	/			
	2.473	+0.005/-0.000	2.478	/			
	2.573	+0.005/-0.000	2.578	/			
	2.673	+0.005/-0.000	2.678	/			
	2.750	+0.005/-0.000	2.750	/			
	2.750	+0.005/-0.000	2.750	/			
SIDE B	0.313	+/-0.010	0.313	/			
	2.360	+0.005/-0.000	2.365	/			
	2.360	+0.005/-0.000	2.365	/			
	2.366	+0.005/-0.000	2.371	/			
	2.473	+0.005/-0.000	2.478	/			
	2.573	+0.005/-0.000	2.578	/			
	2.673	+0.005/-0.000	2.678	/			
	2.750	+0.005/-0.000	2.750	/			
	2.750	+0.005/-0.000	2.750	/			
	0.126.53	+/-0.020	126.550	/			

Measured by: A.N.	Audited by: A.W.M.	Prototype Approval: N/A
Date: 09-11-19	Date: 9-11-23	Date: N/A

Rev	Date	Change	Revised by	Approved
A	08.11.07	New Issue (P/O D212-664-107)	KJ/EC	12

Item	Qty -147	Qty -147B	Part Number	Description
1	X		D212-664-147	CROSSTUBE ASSEMBLY (205/212/412 LOW FWD)
2		X	D212-664-147B	CROSSTUBE ASSEMBLY (214 LOW FWD)
3	1	1	D6019-128	CROSSTUBE
4	2	2	D2893-1	SUPPORT
5	4	4	D3595-063-450	RUBBER CUSHION
6	2	2	D3658-1	CUFF
7	4	4	MS21920-25	CLAMP (OR MS21920-26)
8	44	44	CR3212-4-06	RIVET (OR M7885/3-4-06)
9	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
10	A/R	A/R	SIKAFLEX-241/-291	SEALANT (OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT)

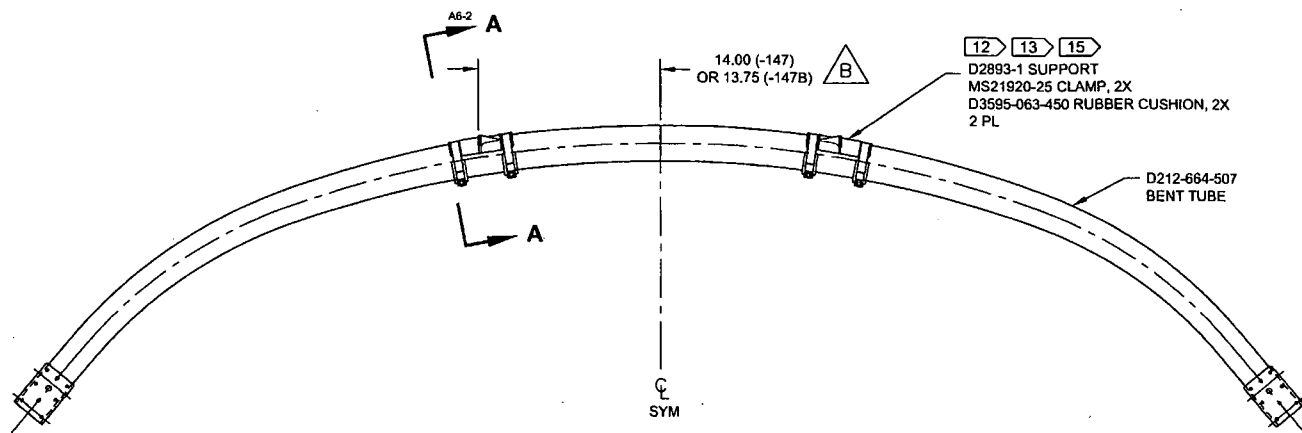
GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6019-128
FINISHED LENGTH = 126.528±0.020 (BEFORE BENDING/TRIMMING)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D212-664-XXX" AND BATCH NUMBER ON INSIDE OF CUFF
USING VIBRATING STYLUS.
- 7) WEIGHT: D212-664-147 = 24.2 lbs (PER IIN-D212-664)
D212-664-147B = 24.2 lbs (PER IIN-D212-664)
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) WHEN MACHINING TAPER, RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD
BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6%
BASED ON O.D., EXCEPT UP TO 10% IS ALLOWED IN AREA NOTED.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2893-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF
D2893-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER
INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-25 CLAMPS (OR -26) WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE D2893-1
SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE SUPPORT.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE
SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS.
DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE
UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS
NOT BOTTOMED-OUT AFTER TORQUING.
- 16) INSTALL D3658-1 CUFF AFTER CHEMICAL CONVERSION COAT BUT BEFORE PAINT, WITH A LAYER OF
SIKAFLEX-241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN CUFF AND CROSSTUBE.
SEAL EDGE OF CUFF TO ENSURE NO GAPS.
- 17) TOUCH-UP HOLES WITH CHEMICAL CONVERSION COAT.

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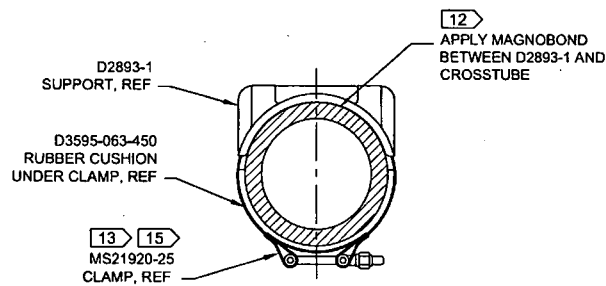
B	REVISE GENERAL NOTES/PART LIST; UPDATE TO CURRENT STANDARDS; ADD -147B (ZN C4-2, D4-2)	RF	09.09.30
A	NEW ISSUE	CP	07.07.07
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
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MFG. APPR.	RF	D212-664-147	SHEET 1 OF 4
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ASSEMBLY DETAIL**



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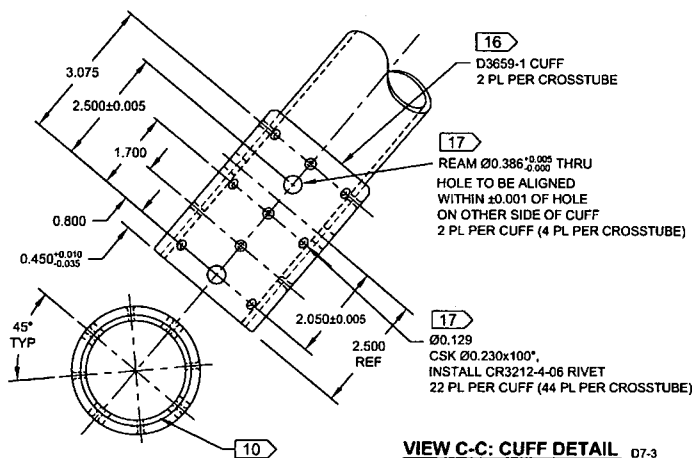
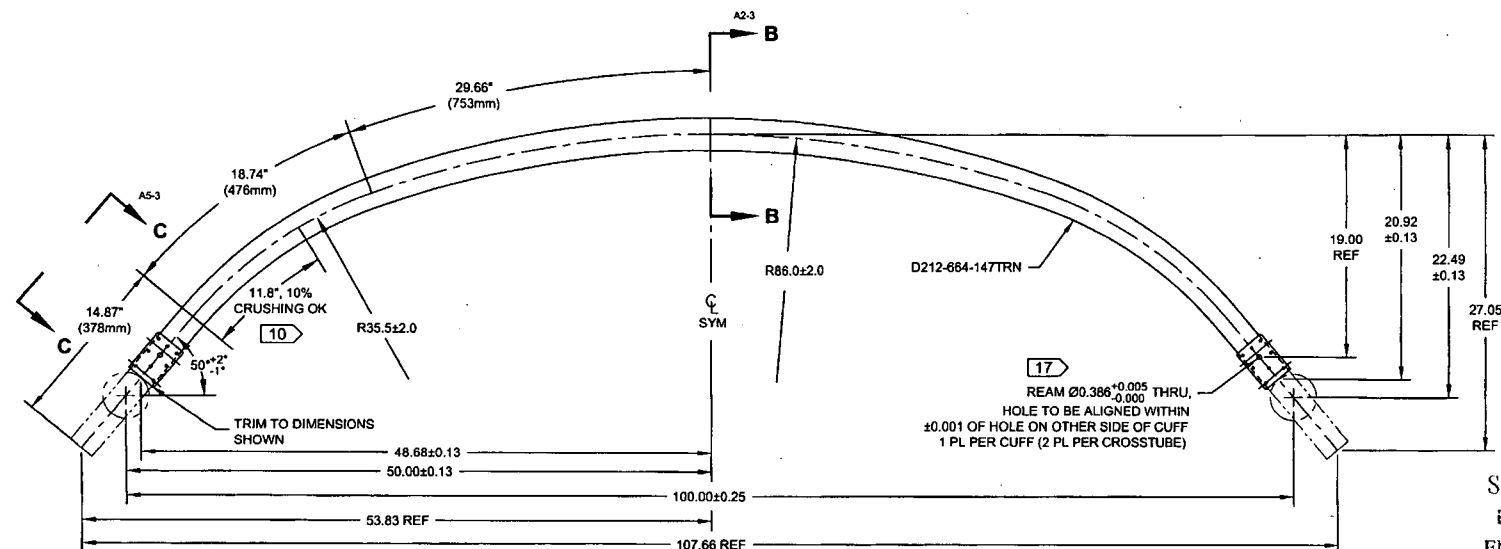
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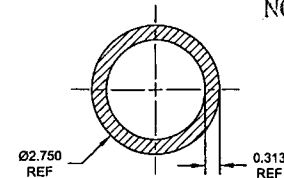
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BENDING AND DRILLING DETAIL

10 B

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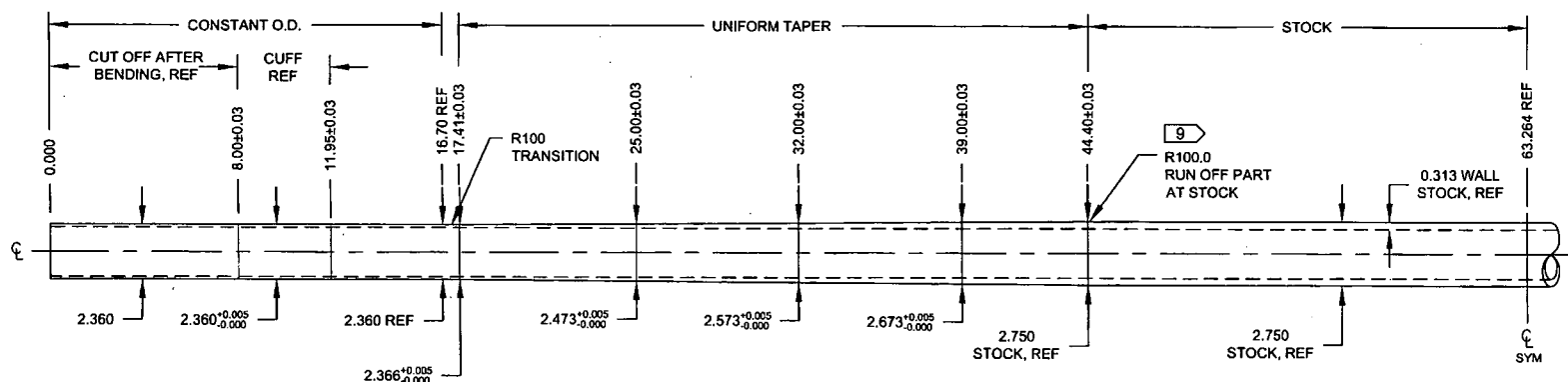
VIEW C-C: CUFF DETAIL 07-3
SCALE 4X



SECTION B-B 05-3
SCALE 4X

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